How Relevant are "Evidence-Based Treatments" Developed for Civilian Single-Assault PTSD for Use with Combat-PTSD

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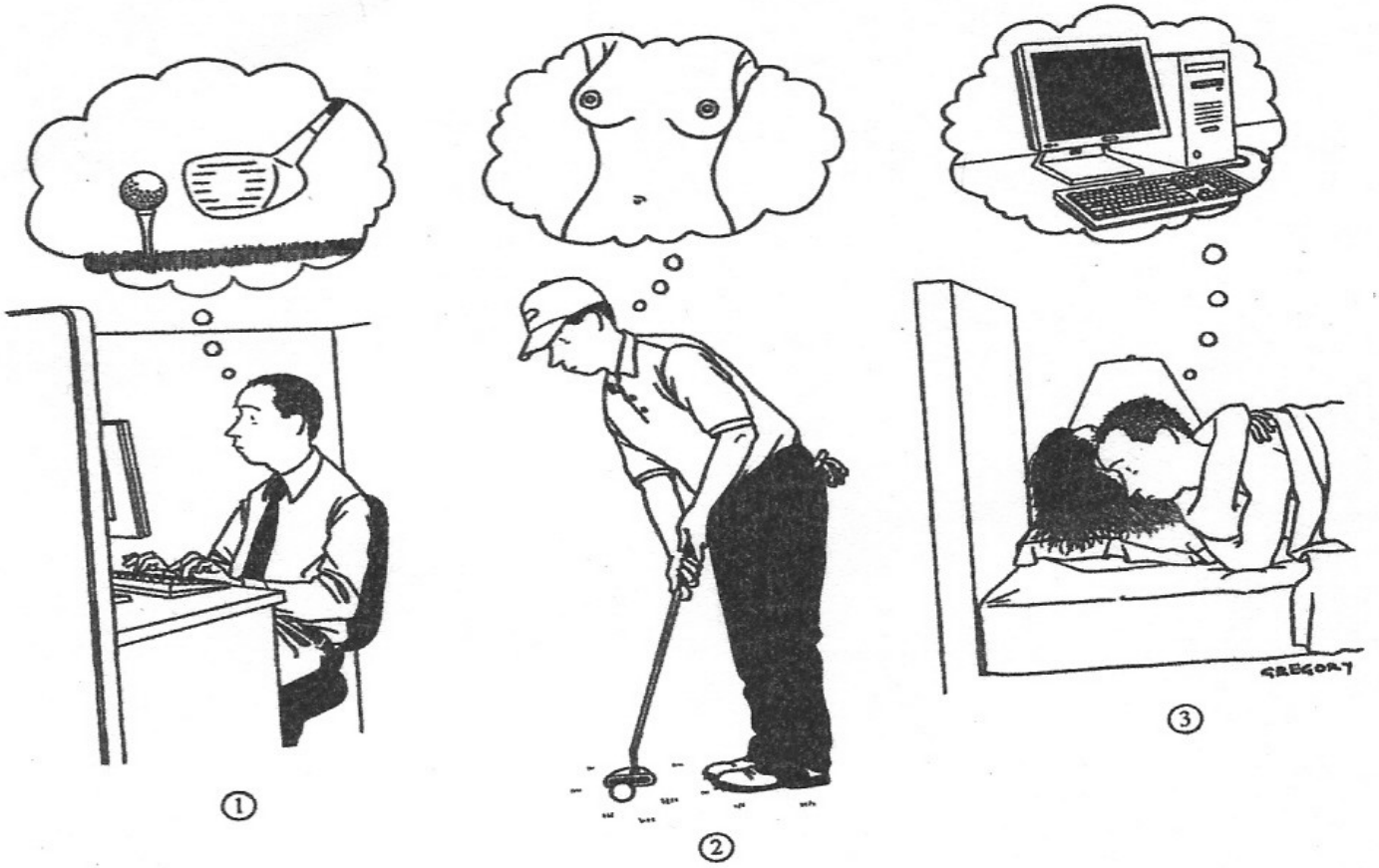
Methods to be discussed

- Cognitive Approaches
  - Cognitive Behavior Therapy
  - Cognitive Processing Therapy
  - Seeking Safety
- Exposure Therapy
  - Prolonged Exposure
  - Eye Movement Desensitization Reprocessing
  - Virtual Reality
- Experiential Approaches
  - Stress Inoculation Training
    - Arousal and Attentional Control/Meditation

"I'm doing a lot better now that I'm back in denial."



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Cognitive Behavior Therapy

- Individual or Group
  - Identifies irrational thoughts to current situation
  - Considers appropriate responses to situation
  - Practices skills for better control over thoughts and actions
- Evidence in PTSD
  - shows benefit in a number of RCT with civilians
    - Ballenger et al., 2000
    - Bradley et al, 2005
    - Benish, Imel, Wampold, 2008
  - No RCT reported in recent combat PTSD

Cognitive Processing Therapy

- Patricia Resick (NCPTSD)

- CBT with a particular trauma focus
  - Individual or group
  - Developed for civilian female assault victims
  - Live or distance applications
  - Addresses cognitive distortions surrounding the trauma, including guilt and meaning
    - Engages with the traumatic event for cognitive restructuring
    - Emphasizes safety, trust, self-esteem, power and control, intimacy, etc.

Cognitive Processing Therapy

- Good evidence of efficacy in civilian female assault victims
  - Resick, P.A. & Schnicke, M.K (1996) Cognitive processing therapy for rape victims. London: Sage Publications
- A few head to head trials with PE show equivalence, with superiority for feelings of guilt
  - Resick and Calhoun, 2001; Resick and Schnicke, 1992; Resick et al., 2008; Monson et al., 2006)
- No published RCT in recent combat veterans I know of
  - Several single arm trials in veterans
  - Resick P.A., Monson C.M. and Chard K.M. (2007) Cognitive processing therapy: Veteran/Military version Washington, DC: Department of Veterans' Affairs

Seeking Safety

- Lisa Najavits
  - Developed primarily for dual diagnosis (SA/PTSD)
  - Individual and Group approaches
  - Modular, therapists can choose the modules or order of modules to discuss
- Evidence shows good results in single group designs, and two RCTs for dual diagnosis
    - (Najavits, 2004; Desai et al, 2008; Desai & Rosenheck, 2006)
- No RCTs in combat veterans that I know of, although there are several single group studies in veterans with complex PTSD

Exposure Therapy

- In the 1980's, Terence Keane and colleagues found that exposure therapy was effective in treating the PTSD symptoms of Vietnam War veterans.

- In the 90s, research by Edna Foa and her colleagues showed that exposure therapy was perhaps the most effective Tx for reducing PTSD symptoms of rape victims, including persistent fear. Improvements were seen immediately after exposure therapy, and sustained during a three-month follow-up.

- Foa, E. B., Rothbaum, B. O., Riggs, D. S., & Murdock, T. B. (1991). The treatment of posttraumatic stress disorder in rape victims: A comparison between cognitive-behavioral procedures and counseling. *Journal of Consulting and Clinical Psychology, 59,* 715-723.
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Exposure Therapies

- Ballenger JC. Davidson JR. Lecrubier Y. Nutt DJ. Foa EB. Kessler RC. McFarlane AC. Shalev AY. Consensus statement on posttraumatic stress disorder from the International Consensus Group on Depression and Anxiety. Journal of Clinical Psychiatry. 61 Supplement. 5:60-6, 2000.

- Panel Conclusion, based on evidence available at that time concluded that *exposure therapy is the most appropriate psychotherapy for PTSD.*

Comparison of Psychotherapies

- A meta-analysis of RCTs for PTSD found that although many approaches claimed high outcomes for patients, when you account for drop out rates, and look at intention to treat (not just those who completed the treatment), most approaches averaged about a .4-6 effect size of improvement
  - Bradley et al (2005)
- A meta-analysis of head to head comparisons found no benefit of one psychotherapy approach over another for PTSD
  - Benish SG; Imel ZE; Wampold BE (2008)

Exposure Therapy

- Basic Premise:
- Fear reaction was paired with cognitive appraisal of events.
  - PERCPETION OF EVENT ~ FEAR
- Memory of those events are now associated with the fear reaction
  - MEMORY OF EVENT (and related triggers) ~ FEAR
- Tx: Pairing the memory of those events with a new feeling, and showing that disaster does ensue, breaks the old conditioning and reduces associated problems
  - MEMORY OF EVENT ~ NEW EMOTION (extinguish related triggers)

Exposure Therapy

- Variations
  - Exposure:
    - Use imagery (imagine internally)
    - Use narrative (describe verbally)
    - Make a recording and listen to it or a journal and read it
  - Counseling Process:
    - Behavioral Emphasis:
      - Tolerate the distress, relief will come when fear response becomes extinguished
    - Cognitive Emphasis:
      - Understand the constructive and irrational nature of one's fears
    - Skill-based Emphasis:
      - Learn to control one's cognitive and somatic reaction to internal or external phenomena
  - Number of sessions (1-2x/week) plus homework

EMDR

- Exposure Therapy
- Addresses past traumas and multiple traumas as well as the most recent index event (compared to PE)
- RCT in civilians and single group designs in veterans shows results equivalent to other exposure therapies
  - Meta-analyses show EMDR to be equivalent to CBT and exposure therapies
    http://www.emdr.com/studies.htm#randomized
  - But EMDR advocates point out that fewer sessions and no homework is required, and point to fewer drop outs
    - Bradley, et al, 2005; Davidson & Parker, 2001; Maxfield & Hyer, 2002; Rodenburg et al, in press; Seidler & Wagner, 2006.
  - One RCT in Vietnam veterans is published with positive results: Carlson, J., Chemtob, C.M., Rusnak, K., Hedlund, N.L, & Muraoka, M.Y. (1998). Eye movement desensitization and reprocessing (EMDR): Treatment for combat-related post-traumatic stress disorder. *Journal of Traumatic Stress, 11,*3-24.
  - 12 EMDR pts compared to 12 relaxation or 12 usual care with psychophysiological reactivity as an outcome

Types of Exposure Therapy

Minimal Arousal Approaches

1) Desensitization-type Arousal Control

- Based upon arousal control and graded exposure
  - (emphasis for cure lies in controlling arousal to exposure)
- Advocated by Jacobson and others
- Patients learn to minimize arousal (PMR) while progressively confronting an increased hierarchy of fears
- Theory states that fear content was will be re-associated with reduced arousal, eliminating symptoms and avoidant behavior.
- Generalized effects occur through ability to have reduced arousal in the face of previous fear producing stimuli

(minimal arousal not generally found to be as effective in PTSD Tx)

Types of Exposure Therapy

1b) Controlled Dissociative Approaches

- Hypnosis, Relaxation with guided imagery, meditation
  - Similar to systematic desensitization in theory
  - Two approaches:
    - Dissociation **away from** the arousing stimuli
      - Teaches avoidance of arousing stimuli
      - No good evidence that this is effective, and some that it detracts
    - Dissociation from arousal reaction **in order to more fully tolerate arousing stimuli**
      - There is a lack of evidence to determine which elements of arousal are required for exposure therapy to be effective:
        - *Cognitive+Somatic? Cognitive alone? Somatic alone?*
      - Emerging evidence suggests that reducing somatic hyper-arousal in order to engage more fully in cognitive processing may be useful
        - D-cyclocerine; beta-blockade; meditation – when integrated into the exposure therapy (not separate)

Types of Exposure Therapy

2) Maximal Exposure (flooding)

- Based on classical conditioning
  - (emphasis for cure lies with the exposure)
- advocated by traditional behaviorists (phobia)
- patients directly confront fears in order to activate and maintain high arousal (Maximum SUDS: e.g 100)
- theory states that once arousal subsides, memories will no longer be associated with high arousal, but instead with neutral emotion
- *Not typically recommended for PTSD*
  - Phobic patients have a baseline of comfort to return to
  - PTSD and GAD has constant arousal state; and poor resources to cope with flooding. They are always 'flooded'

Types of Exposure Therapy

3) Maximal Threshold of Arousal Approach

3a) Prolonged Exposure

- Behavioral approach based upon a theory of conditioned arousal extinguishing over repeated exposure
- Uses a graded exposure approach, sustaining high levels of maximum tolerable arousal for optimal effect
- Promoted by Edna Foa, Elizabeth Hembree and others

- Shown to be effective in RCTs for civilians, mostly female assault victims (although large drop out, up to 70% effective for completers; average of 50% effective for completers)
- RCTs for combat veterans have not been reported that I am aware of

Adapting and Optimizing Treatments

- PE alone
  - Good outcomes with single index trauma from assault and MVA civilian patients (mostly female)
  - May not be directly transferable to mostly male combat related PTSD without requiring modifications
    - Complex chronic PTSD (multiple co-morbidities, including SA/pain/tbi)
    - No specific index trauma, but an accumulation of stress over many deployments
    - Personality Style (concrete cognition/emotionally blunted; hyper-aroused and flooded with intrusive thoughts and feelings; etc).
    - Problem with drop out rates (as high as 50% in studies of PTSD or with exposure based therapies).

Adapting and Optimizing Treatments for Combat Veterans: An Example

Virtual Reality

An exposure tool that can be used in a variety of ways:

- 3b) PE + Virtual Reality
  - Similar to PE, but therapist controls exposure
  - Reliance upon sustained exposure for treatment efficacy
  - Promoted by Rothbaum and Rizzo
  - Useful for those who have low visual imagery
  - Useful for those prone to avoidance
  - Benefits include controlling stimuli intensity
  - VR Vietnam and VR Vietnam/OEF/OIF is the only approach that has been specifically developed for and tested on combat veterans

Adapting and Optimizing Treatments for Combat Veterans

- PE + Virtual Reality
  - Effective for phobias in several RCTs
  - Possibly effective for combat-related PTSD
    - Rothbaum et al (1999) in a small single arm trial
      - Useful for treatment resistant Vietnam Veterans who completed therapy (but note a 50% drop out rate)
    - CDR McLay (this conference) will report on a recent small pilot study OIF/OEF marines with PTSD showed a <50% drop out rate (half of those after Tx began), and a 70% clinically significant reduction in PCL scores, and more than half no longer meeting criterion **for completers** (no intention to treat)

Adapting and Optimizing Treatments for Combat Veterans

- **3d SIT + Virtual Reality**
  - Emphasizing Arousal & Attentional Control Skills
  - Based upon Stress Inoculation Training model
    - Train in skill (attention and arousal control)
    - Apply to problem area
  - Similar to PE, but therapist controls exposure AND trains patient to control arousal reaction
  - Reliance upon control of somatic and cognitive reactivity for treatment efficacy
  - Uses biofeedback to monitor physiological reactivity
  - Targets a wide range of co-morbid conditions: Any situation where one's mental, emotional and physical reactivity need control
    - Pain, insomnia, anger, night terrors, mTBI
    - Waking up with nightmares; hearing a backfire or helicopter in the street
    - etc

Adapting and Optimizing Treatments for Combat Veterans

Attentional Retraining Arousal Control

- Treatment emphasizes controlling arousal and focusing in the moment
- SIT-based theory and Meditation-based experiential skills
- Patients learn to control autonomic arousal and focus more fully in the moment while confronting as much arousal as they can manage and over which they can exert control
- Theory states that gaining active control over arousal and thoughts will reduce irrational and automatic responses and improve coping strategies
- Generalized effects occur through ability to control cognitive and physical reactions to whatever arousing stimuli occur, PTSD related or otherwise.

Adapting and Optimizing Treatments for Combat Veterans

Exposure Therapy with Integrated Arousal Control

- **Emphasis is on focusing more fully on the arousing stimuli without negative reactivity: Similar to PE, but thought to enhance the process by allowing patients to more fully engage fearful events**
- Patients are first taught to control their autonomic arousal and attend more fully in the moment, without suppressing emotions or thoughts
- Once achieved (after the first or second session, and with homework practice), they apply these skills in VR
- Patients are continually physiologically monitored (HRV, SC, Respiration)
- Arousal is observed, allowed to increase to maximum tolerable levels, and then patients are asked to sustain their arousal and focus in the moment without reactivity until arousal decreases sufficiently. Patients can reduce arousal from time to time to gain mastery and achieve confidence that they can tolerate fearful stimuli
- This is repeated continually until patients no longer become significantly aroused during sessions or outside of sessions

Adapting and Optimizing Treatments for Combat Veterans

- SIT + Virtual Reality (Arousal/Attentional Control) with Combat Vets
  - Similar to Exposure Therapy, but therapist controls exposure AND trains patient to control reactivity
    - Use before and after each session; in session as needed; in vivo)
  - Reliance upon control of somatic and cognitive reactivity for treatment efficacy
    - Helps engage patient more fully in therapy
    - Helps with in-vivo homework
    - Helps with daily living (staying more fully engaged v distracted)
  - Targets a wide range of co-morbid conditions
    - Pain, insomnia, anger, night terrors, mTBI
    - Effective for any situation where one's mental, emotional and physical reactivity need control
    - Waking up with nightmares; hearing a backfire or helicopter in the street

Adapting and Optimizing Treatments for Combat Veterans

- How much value does VR with Arousal Control give above and beyond standard exposure therapy?
  - Wiederhold et al,1999 compared Exposure alone to VR to VR plus biofeedback for flying phobia.
    - Exposure had 20% efficacy (able to fly w/o drugs > 6 mo)
    - Exposure plus VR had 80% efficacy
    - Exposure plus VR plus biofeedback had 100% efficacy
  - Results were found at three and six month follow up

Adapting and Optimizing Treatments for Combat Veterans

- ET with VR (VRGET or VR AAC)
  - Shown effective in small single group trial for combat PTSD
  - Shown effective in small RCT for combat PTSD (change in CAPS > 30%)
  - Shown useful in controlling arousal during recall of traumatic events for concussed patients with PTSD

Comparisons and Limitations

Most approaches have been developed for and studied on:

- Single assault victims
- Women
- Civilians
- Simple PTSD or childhood abuse
- These patients may be amenable to reflection-oriented therapies

- Military PTSD is more commonly:
  - Military
  - Males
  - Ongoing multiple stressors, sometimes occurring over years of multiple deployments
  - Military members are relatively less receptive of reflective-oriented psychotherapy
  - Complex PTSD
    - Greater history of past abuse than may be found in many civilian populations
    - Substance abuse (45% of marines drink abusively independent of deployment). Combat exposure is associated with a 4.5OR of heavy drinking
    - Pain, mTBI/PCS, disability, etc

- Most of these approaches have been examined in single group designs in a Veteran population (mostly mixed or Vietnam)
- Only VR has been specifically developed for and tested for OEF/OIF veterans.
  - Preliminary findings in several single group designs and one small RCT look as if they are comparable to what exposure therapies report in civilian populations. But does that mean that the other approaches would be as beneficial without modifications to directly address combat veteran's unique attributes?

Optimizing Treatments

- For whom is which treatment best?
  - For which type of conditions?
    - Co-morbid
      - pain, substance abuse, depression, TBI, etc.
    - Complex PTSD
      - historical traumas influencing current traumatic encounter and reactivity
  - For which type of patient?
    - Concrete vs reflective
    - Action/Skill-oriented vs thought-oriented

Conclusion

- Approaches that have been proven effective in civilian populations need to be studied in combat veterans
- These approaches will likely need to be modified to adjust to the special circumstances of current combat veterans with poly-incident PTSD and polytrauma
- For research, approaches are standardized, but for clinical application, approaches should be varied in order to adjust to the specific circumstances of the patient (past abuses, comorbid conditions, etc)

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